

EXTERNAL FUNDING REVIEW

Mode of Funds	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Grant-in-aid	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
URP's share of funds	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
URP's share of funds: Feasible to meet USD share through own resources	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Donorship	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Feasible to meet debt servicing	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

July 2012

Water Supply Services

Indicator	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Coverage of individual sewerage connections in urban	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Coverage of individual water supply connections in urban	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Per Capita supply of water, consumption and loss	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Continuity of water supply (hours per day)	0	0	0	0	0	0	0	0	0	0	0	0	0
Cost of financial losses	0	0	0	0	0	0	0	0	0	0	0	0	0
Cost of technical losses of water connections	0	0	0	0	0	0	0	0	0	0	0	0	0
Quality of water supplied	0	0	0	0	0	0	0	0	0	0	0	0	0
Presence in technical of consumer complaints	0	0	0	0	0	0	0	0	0	0	0	0	0
Presence in collection of water supply charges	0	0	0	0	0	0	0	0	0	0	0	0	0
Cost recovery in water supply services	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Wastewater Services

Indicator	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Coverage of individual sewerage connections in city	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Coverage of individual sewerage connections in urban	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Coverage of individual toilets in city	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Coverage of individual toilets in urban	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Treated effluent water reuse/disposal system	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Household reporting to open defecation in city	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Coverage of drainage network	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Incidence of water logging/flooding	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Collection efficiency in drainage network	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
% of sewage land in street annually	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Availability of sewage treatment capacity	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Availability of sewage treatment facilities	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Study of wastewater and sewage treatment	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Cost of reuse and recycling of treated wastewater and sewage	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Presence in technical of consumer complaints	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Presence in collection of wastewater charges	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Cost of solid recovery in wastewater services	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Solid Waste Management

Indicator	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Household level coverage of collection of solid waste (MSW) services in city	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Household level coverage of MSW services in urban	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Presence of collection of MSW	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Cost of segregation of MSW	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Cost of solid recovery	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%



Performance Improvement Planning for Urban Water Supply and Sanitation Services

CEPT University
June 2013

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1. Performance Improvement Planning

Benchmarking is increasingly being promoted as an important mechanism for introducing accountability in service delivery. The Ministry of Urban Development (MoUD), Government of India launched the Service Level Benchmarking (SLB) initiative in 2009 covering water supply, wastewater and sanitation, solid waste management and storm water drainage.¹ Over the past four years, progress has been made by cities in adopting the SLB Framework. Through the PAS Project of the CEPT University, an online system has been established in the states of Gujarat and Maharashtra for annual collection of performance information and monitoring.

The principal purpose of performance assessment of water and sanitation is to guide service providers in improving performance through a benchmarking process. The Performance Improvement component of the PAS Project has focused on development of tools and approaches to improve delivery of city level services for water supply, sanitation and wastewater and solid waste management. Support has been provided to over 30 cities in both the States in preparing performance improvement plans. Guidance material has been developed under PAS Project, which includes development of city-wide framework for services oriented Performance Improvement Planning and a supporting decision support tool and software, Performance Improvement Planning (PIP) Model.

Traditionally, engineers in state-level agencies or local governments have developed improvement proposals in form of detailed project reports (DPRs) that depend on central/state governments for funding. A DPR gets implemented only when the funds are made available and an agency is identified to construct infrastructure. Experiences from cities that have implemented new capital investments with grants, suggest that such investments are often unsustainable, as the technical and financial implications of the operation and maintenance (O&M) of the infrastructure are usually ignored. In absence of a financing plan for funding O&M costs and replacement costs, the infrastructure deteriorates and does not improve service levels.

Decision-making for infrastructure provision involves developing and evaluating credible options to solve a decision problem. The choice of improvement actions can have a significant financial effect, and different actions yield different outcomes. In such a situation, a decision support tool would enable users to develop and select an appropriate set of options for more informed decisions. Test applications of this approach and the PIP model

¹ MoUD (Ministry of Urban Development). 2009. "Handbook on Service Level Benchmarks", Government of India. The SLB initiative aims to promote uniform set of indicators, definitions and service benchmarks to measure and monitor service standards.

in selected cities in Gujarat and Maharashtra have provided valuable feedback for constant improvisation.

The PIP approach developed under the PAS Project builds on MoUD's SLB Benchmarking Framework to assess service performance. It focuses at a strategic level to identify a financially viable plan of action to achieve improvements in delivery of water supply and sanitation (WSS) services. The main emphasis is to evolve 'service improvement plans' which include a wider set of actions including policy and process reengineering. The focus on service level improvements is at its core rather than only infrastructure investments. The approach enables local policy makers and planners to choose from among a range of options, assess their impact on service level, as well as examine the financing options for capital expenditure (capex) and operation and maintenance expenditure (opex). The framework makes it possible for urban local bodies (ULBs) to consider actions that can be financed through ULB resources rather than waiting for grants from central/state governments for major infrastructure projects. It enables ULBs to examine impacts of low-cost actions like reducing water losses, improving collection efficiency and other process reengineering solutions. This approach assists ULBs to recognise the merits of planning for asset management and shifts focus from infrastructure creation to improving service delivery.

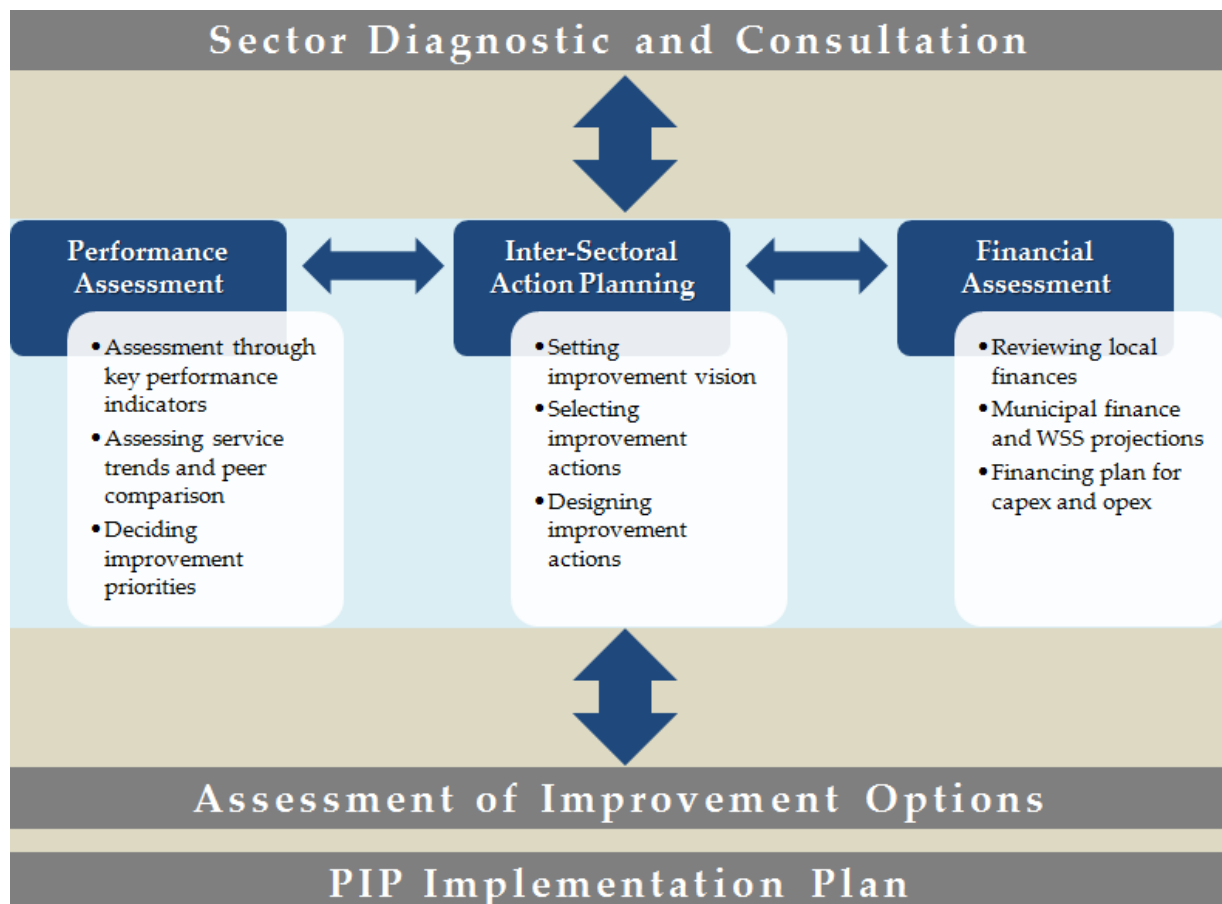
The PAS approach to PIP is also rooted in the municipal system as water and sanitation services in India are largely provided by municipal governments. It is therefore important to link performance improvement planning to municipal finance. The performance improvement plans developed through such an approach also include rigorous municipal financial assessment. This makes it possible to determine the use of revenue surplus of ULBs for a water or sanitation plan along with improved cost recovery. Thus, improvement plans are developed in the context of financial and technical resource availability at ULB level and the approach helps ULBs to choose a set of actions that are affordable and financially sustainable.

Service oriented PIP approach offers detailed guidance on identifying an appropriate set of actions and enables users to assess impact of these interrelated set of actions on both service performance and finances. It does not suggest one specific plan, but makes it easy to develop and assess various options. The performance improvement plans developed through this approach are multi-year integrated plans which provide for phasing of investments and stages at which tariff revisions become necessary to maintain assets and ensure improved performance in service delivery assessed across themes of access, equity, service levels and quality, efficiency and financial sustainability. This approach is outlined below. It is supported by a PIP model developed as a decision support system tool under the PAS Project.

2. Key Components of Performance Improvement Planning

The approach for PIP has been developed across three main interlinked components as highlighted in Figure 1 below.

Figure 1: Key components for performance improvement planning



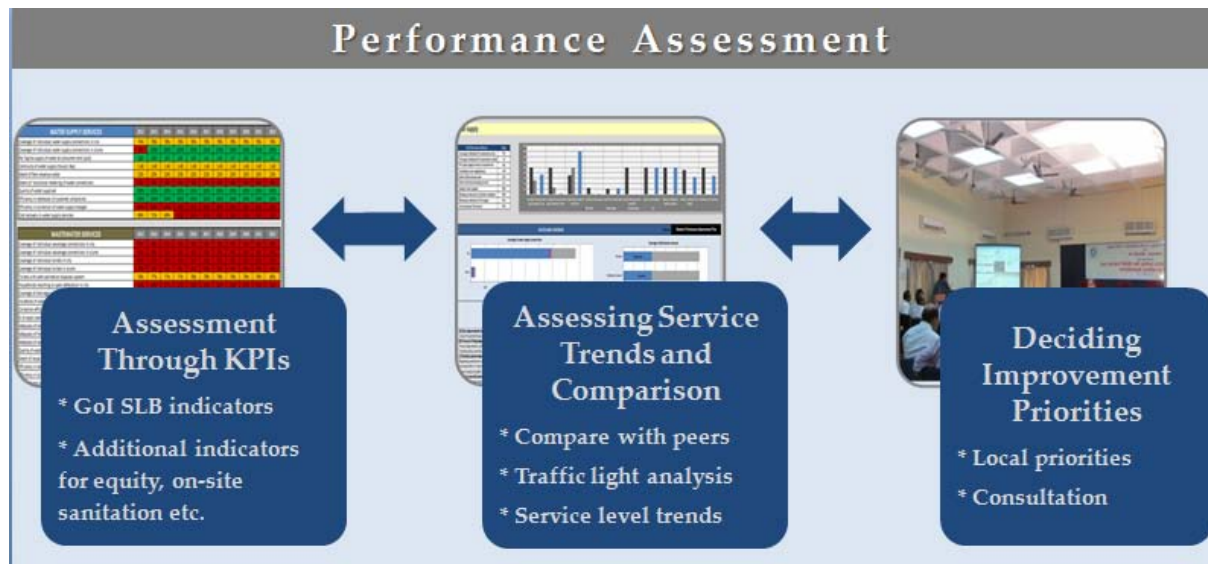
The three main components of the PIP process are elaborated below:

- **Performance assessment:** Service performance is assessed using a set of key indicators across five themes: coverage, equity, service levels, efficiency and financial sustainability. These include all the indicators from the MoUD’s SLB Initiative. Few additional indicators address issues of equity and help capture more decentralised wastewater management options.² This helps to review improvement priorities and plan for short and medium term improvements. Using the PAS data base to identify peer performance, users can compare and prioritise areas that require attention for service performance improvement. This assessment is supported in the PIP model through ‘traffic light analysis’ for all indicators. Cities can also track their performance over time to identify priorities. Such analysis provides a more informed

² Annex 1 provides a full list of indicators across the five themes and all such-sectors of water supply, sanitation and wastewater, and solid waste management.

basis for stakeholder consultations to identify areas of focus and priority. The key outcome of this stage is a vision for service delivery at ULB level and identification of targets for key performance areas.

Figure 2: Performance assessment through the PIP Model



- **Inter-sectoral action planning:** Development of a performance improvement plan requires identification of a set of actions to achieve desired service levels. Conventional infrastructure planning process looks at such investments as ‘stand alone projects’ rather than an integrated service improvement plan. Under the proposed PIP approach, all inter-related implications of actions in one area are taken into account in the integrated software. For example an increase in quantity of water supplied is assessed by its impact on increase in per capita supply (lpcd), increase in wastewater to be collected and treated and related capacity implications of wastewater treatment. Similarly, impact of increased number of connections is considered on aspects such as coverage, operating costs, per capita supply and municipal and water supply finances.

Under this approach and in the PIP model, actions are not limited to traditional investments in new assets, but also include measures related to policy changes, process reengineering and refurbishment of existing assets. These are often referred to as ‘no cost – low-cost measures’ which can have significant influence on service levels. Even for traditional investments, the PIP model enables an easy assessment of technology and management options.

Figure 3: Key components of inter-sectoral action planning in the PIP Model

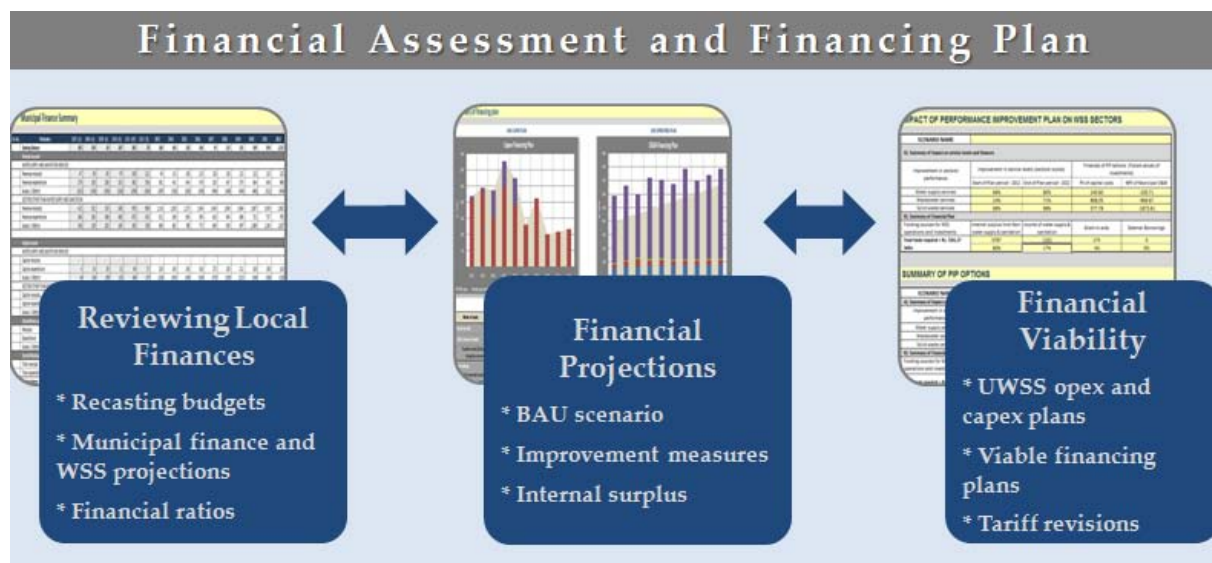


Thus, this component of the PIP process involves selection of various improvement actions and assessing their impact on overall service performance.³ Through this iterative process a combination of actions with the desired impact on service levels and which is broadly affordable for the city can be shortlisted. The PIP model enables users to design each action in detail in relation to its phasing, costs, revenue generation potential and other design decisions. The PIP model has already identified a large set of actions with guidance on their calibration. In addition, the PIP model also allows additional customised actions to be designed by users. The output of this stage is several plan options and their impacts on service performance.

- **Financial assessment and financing plan:** For identifying a financially sustainable improvement plan, it is important to assess the financial strength of service provider to sustain their existing operational expenditure and make new investments. This also includes wider municipal finance assessment. Financial viability is assessed in relation to the possibility of meeting capital expenditure through internal surplus, grants or external borrowing by the ULB. The assessment includes water and sanitation related revenues and expenditure as well as overall revenue and expenditures.

³ Annex 2 provides the full list of actions included in the PIP Model for the three sub-sectors.

Figure 4: Financial planning through use of PIP Model



The PAS PIP Model links improvement actions across water and sanitation and helps simulate impact on service levels and on municipal finance (revenue, expenditure and surplus) over a ten year period to assess financial sustainability.

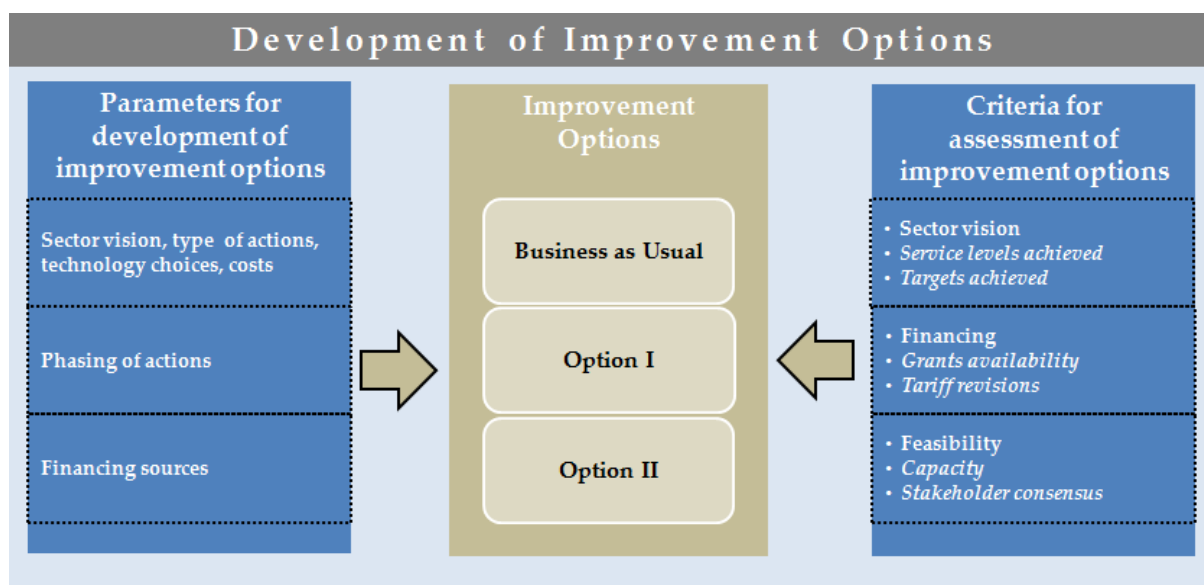
Using the PIP model, several improvement options can be simulated and analysed in terms of their financial (capital and O&M expenditure and additional revenue) implications. The financing plan for each city-wide option is arrived at by assessing different sources for selected actions such as: likely availability of grants, internal resources to fund capital improvements from surplus and external borrowing and potential for private and household contributions. The PIP model also assesses possibility of sustainable external borrowing for capital investments. To assess the possibility of internal sources, financial assessment is done within a municipal finance framework where surplus on both urban water supply and sanitation (UWSS) and non-UWSS accounts is estimated after meeting the estimated resource requirements of other non-UWSS activities. Based on this overall assessment, the model also enables users to iteratively assess tariff revisions needed in taxes and user charges to ensure financial sustainability. This provides important analysis and assessment for more informed decisions through stakeholder consultations.

3. Development and Assessment of Options

Through an iterative process, a number of different options can be simulated in the PIP model to achieve the locally set sectoral vision and related targets for individual performance indicators. Each improvement option comprises a discrete set of actions that may achieve either different levels of improvement in service performance, or use different feasible technologies to achieve similar performance levels. The options may also be developed to either capture varying phasing of actions and a different timeline on service

improvements, or for varying financing arrangements. For example for the same technology, options may also capture fully grant-based financing versus use of creative financing with contributions from private sector and households/communities. When it is not possible for the service providers to get grants for large capital expenditure, it enables an easy assessment of measures for increasing efficiency, cost reductions in service delivery, raising revenue sources and implementing low-cost solutions that bring in significant improvements in service levels.

Figure 5: Development and assessment of improvement options using PIP Model



The “Business as usual” option is used as the base case that forecasts service levels and municipal finances based on past trends. This option assumes that no new improvement actions will be taken up by the ULB and the status quo will continue in terms of inputs in service delivery. On the other hand, the different ‘improvement options’ help assess implications of actions based on differing targets, technology choices or phasing, moderate investments and actions based on heavy investments on service indicators, capex and opex funds.

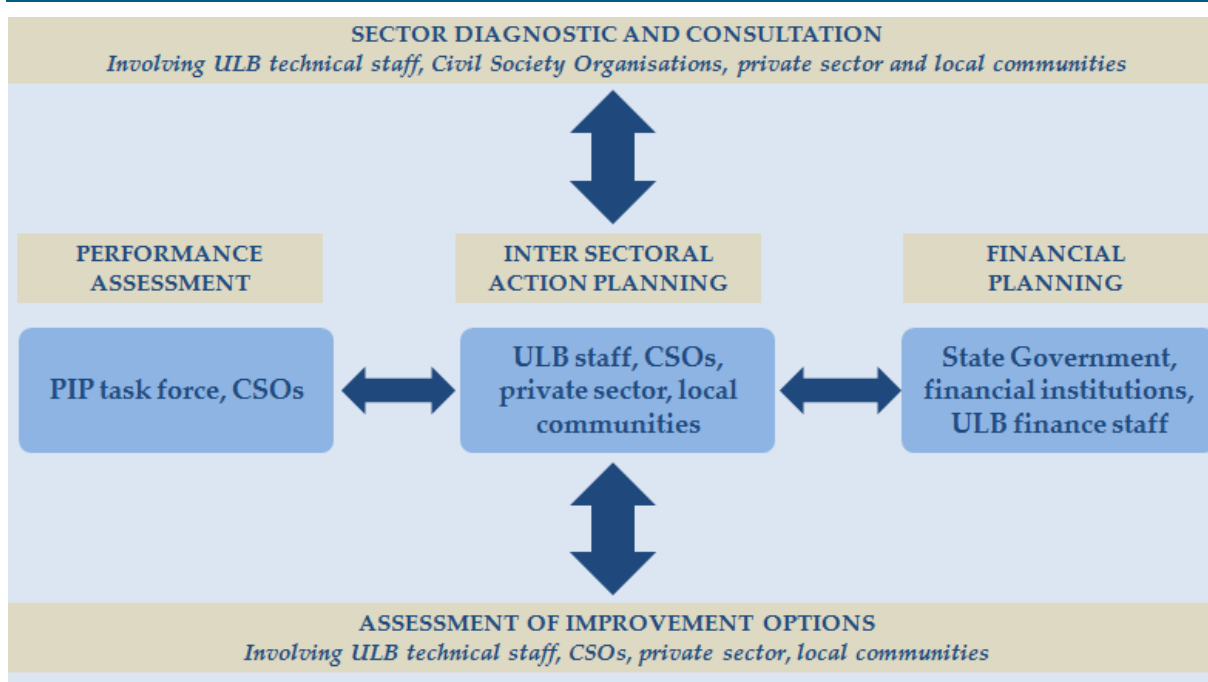
Different options developed through these permutations will have different associated cost and financing profiles. Development of these options requires a good and balanced understanding of variety of factors: sector priorities, local conditions and capacity, feasibility of different financing sources, etc. Thus, the users will need to balance service levels, technology choices and financing implications in assessing different improvement options. Suitable and locally appropriate option can be identified through stakeholder consultation and translated into a performance improvement plan for the city. Thus the PIP model helps decision-making through an assessment of various options and their financial and service level implications.

4. Stakeholder Participation and Consultation

Improvement priorities that are devised through participatory process tend to be realistic, implementable, and long lasting. It is often said that the state of municipal services in India is in a ‘low-level equilibrium trap’ – i.e. due to low-level of service, consumers are unwilling to accept increases in tariff and with increasing deficits in financing of local services, it becomes difficult to achieve sustainable improvements in service levels and performance. To break out of this low-level trap, it is necessary to engage with all stakeholders at local and state level to ensure their participation in determining priorities and targets for service improvements. With stakeholder participation in decision-making, it would become easier to implement various actions and to revise tariff, if and as necessary.

Proactive and open relationship of city governments with stakeholders, including customers, local non-governmental organisations (NGOs) and other government agencies is fundamental to the core of service provision. This is essential in bringing improvements in service delivery, creating confidence for better cost recovery and creating local partnerships.

Figure 6: Key actors and consultation at different stages in the PIP process



For a PIP process, stakeholder consultation is a cross-cutting activity. It is required at various levels for different stages of PIP preparation. This may involve extensive discussions with the department(s) managing the water supply and wastewater services to understand their perception of constraints and key issues that need to be addressed for improvement in service performance. These discussions need to be supplemented with discussions with citizen representatives, representation from pro-poor groups, special users e.g.

commercial/institutional consumers etc. to understand the end user perspective on the services.

Stakeholder engagement is also critical for identification of local priorities, in determining appropriate phasing of activities, assessing feasibility of various improvement actions identified through diagnostic studies. Equally important is the involvement of various stakeholder groups for assessment of development options, such as: city elected representatives, officials and administrators from the state and local government and other agencies, civil society organisations, private contractors and service providers, local communities representing customers, financial institutions, etc. For this, the PIP model provides analysis and visual representation of sector priorities and implications of options with adequate details for more informed decision-making. The model can also be used as a tool to support meetings through rapid assessment of changes in parameters such as: sector priorities, targets, technology options and costs, phasing, availability of grants, and other financing and related conditions.

5. PIP Model

Based on the approach described above an integrated and comprehensive model has been developed under the PAS Project. The model helps in preparation of city-wide performance improvement plan as per the stages outlined earlier. The model facilitates decision makers to assess implications of the proposed set of improvement actions and to arrive at a financially viable plan for improvements in delivery of services. It captures the cumulative impact due to a series of actions in the three sub-sectors and helps a review of their financial implications. The model also helps to compare improvement solutions across different options. This makes it easy for users to consider various choices in technology, phasing and financing, and to assess their impact on service levels and municipal finances. The model encourages the service providers to optimise utilisation of existing assets and choose appropriate low-cost actions.

The PIP model makes it easy for users to assess various options by quantifying the impact of each option on service delivery, revenues and costs and financing requirements. Several customised reports on service levels and financial impacts provided in the model help users to compare performance, costs and implications on municipal finance. The model also provides a multi-year activity plan and a financing plan for both capital and O&M expenditure requirements. Such detailed analysis for different options provides a basis for an informed debate at stakeholders' consultation. Thus, the use of PIP model can caution decision makers against making sub-optimal choices which are financially unsustainable and/or do not improve service delivery. The improvement plans prepared using this

approach are rooted in service level improvements, rather than focusing on new unsustainable infrastructure.

Annexures

Annexure I: Key Performance Indicators and Local Action Indicators in PIP Model

WATER SUPPLY	WASTEWATER	SOLID WASTE MANAGEMENT
Access and coverage		
Coverage of individual household level connections in city	Coverage of individual household toilets in city	Coverage of household level solid waste services in city
Coverage of individual household level connections in slums	Coverage of individual household toilets in slums	Coverage of household level solid waste services in slums
	Coverage of households with adequate sanitation system	
Service level and quality		
Per capita supply of water at consumer end (lpcd)	Efficiency of wastewater and septage collection system	Efficiency of collection of solid waste
Continuity of water supply (hours/day)	Adequacy of wastewater and septage treatment capacity	Extent of segregation of solid waste collected
Quality of water supplied		Extent of solid waste recovered
Efficiency in service operation		
Extent of non-revenue water	Extent of reuse/recycling of treated wastewater and septage	Extent of scientific disposal of solid waste
Extent of metering of functional water supply connections	Quality of wastewater and septage treatment	Efficiency in redressal of customer complaints
Efficiency in redressal of customer complaints	Efficiency in redressal of customer complaints	
Financial sustainability		
Efficiency in collection of water supply charges and taxes	Efficiency in collection of wastewater charges and taxes	Efficiency in collection of solid waste charges and taxes
Extent of water supply cost recovery	Extent of cost recovery in wastewater services	Extent of cost recovery in solid waste management services

Annexure II: Sector-wise List of Improvement Actions in PIP Model

WATER SUPPLY										
Actions for performance improvement	Impact of actions on Key Performance Indicators (KPIs)									
	Coverage of household level connection in city	Coverage of household level connection in slums	Per capita supply of water	Continuity of water supply	Extent of non-revenue water	Extent of metering of functional connections	Quality of water supply	Efficiency in redressal of complaints	Efficiency in collection of water supply charges and taxes	Extent of water supply cost recovery
ACCESS AND COVERAGE										
A) Data improvement measures										
Household survey to assess water supply services										
Computerisation of water supply records										
B) Process/Policy improvement measures (no-cost)										
Process improvement for new water supply connection applications										
Policy for providing individual water connections in slums										
C) Existing system improvement measures (low-cost)										
Regularising unauthorised connections										
Increasing connections using existing water supply distribution network										
Converting stand posts/public taps into group connections										
D) Create new infrastructure (high cost)										
Laying new water supply distribution network										
Laying internal infrastructure lines in slums										
SERVICE LEVELS AND QUALITY										
A) Process/Policy improvement measures (no-cost)										
Improving water supply quality surveillance										
B) Existing system improvement measures (low-cost)										
Increasing continuity of water supply services										
Improving quality of water supplied										
Treatment of untreated ground water										
C) Create new infrastructure (high cost)										
Augmentation of water supply sources										
Augmentation/replacement of transmission network										
Augmentation of treatment plant capacity										
Augmentation of water storage capacity										
EFFICIENCY IN SERVICE OPERATIONS										
A) Data improvement measures										
Conduct water audit										
Conduct energy audit										
Installation of bulk flow meters										
Mapping of water and wastewater network										

WATER SUPPLY

Actions for performance improvement	Impact of actions on Key Performance Indicators (KPIs)									
	Coverage of household level connection in city	Coverage of household level connection in slums	Per capita supply of water	Continuity of water supply	Extent of non-revenue water	Extent of metering of functional connections	Quality of water supply	Efficiency in redressal of complaints	Efficiency in collection of water supply charges and taxes	Extent of water supply cost recovery
Hydrological modelling										
Conduct Utilities survey (asset mapping)										
B) Process/Policy improvement measures (no-cost)										
Improving processes for regular checking of water losses										
Policy to introduce universal consumer meters										
Improving processes for management of consumer complaints										
C) Existing system improvement measures (low-cost)										
Reduction of losses in trunk main transmission										
Reduction in losses at treatment plant										
Reduction of losses in treated water transmission										
Refurbishment of storage reservoirs										
Improvement in water supply distribution network										
Plugging of leakages at valves										
Replacement of service line connection										
Reduction in free water supply										
Repairing of non-functional metered connections										
Improvement in consumer grievance redressal system										
D) Create new infrastructure (high cost)										
Metering of consumer water supply connections										
FINANCIAL SUSTAINABILITY										
A) Process/Policy improvement measures (no-cost)										
Improving billing and collection of water supply bills										
B) Existing system improvement measures (low-cost)										
Improving collection efficiency of water supply charges/ taxes										
Replacement of pumping machinery										
Other measures to optimise power and energy expenses										

WASTEWATER

Actions for performance improvement	Coverage of individual household toilets in city	Coverage of individual household toilets in slums	Coverage of households with adequate sanitation system	Efficiency of wastewater and septage collection system	Adequacy of wastewater and septage treatment capacity	Quality of wastewater and septage treatment	Extent of reuse/ recycling of treated wastewater and septage	Efficiency in redressal of customer complaints	Efficiency in collection of wastewater charges and taxes	Extent of cost recovery in wastewater services
ACCESS AND COVERAGE										
A) Data improvement measures										
Household survey to assess wastewater services										
Surveys and monitoring of open defecation sites										
Computerisation of wastewater records										
B) Process/Policy improvement measures (no-cost)										
Process improvement for new sewerage connection applications										
Policy for providing sanitation services in slums										
C) Existing system improvement measures (low-cost)										
Increasing connections using existing sewerage network										
Regularising unauthorised sewerage connections										
Provision of safe on-site sanitation system for individual toilets										
Provision of safe sanitation for community/ public toilets										
Improve condition of existing community and public toilet blocks										
IEC campaigns for sanitation awareness										
D) Create new infrastructure (high cost)										
Providing sewerage sanitation system in city										
Providing sewerage sanitation system in slums										
Provide on-site sanitation system in city and slums										
Construction of new community and public toilet blocks										
SERVICE LEVELS AND QUALITY										
A) Process/Policy improvement measures (no-cost)										
Improving processes for regular cleaning of drains and sewers										
B) Existing system improvement measures (low-cost)										
Improving efficiency of septage collection system										
Plugging leakages in wastewater network										
Improving existing sewerage network										
Upgradation of open surface drains to closed drains for storm water										
Reducing water logging/ flooding in city										

WASTEWATER

Actions for performance improvement	Coverage of individual household toilets in city	Coverage of individual household toilets in slums	Coverage of households with adequate sanitation system	Efficiency of wastewater and septage collection system	Adequacy of wastewater and septage treatment capacity	Quality of wastewater and septage treatment	Extent of reuse/ recycling of treated wastewater and septage	Efficiency in redressal of customer complaints	Efficiency in collection of wastewater charges and taxes	Extent of cost recovery in wastewater services
C) Create new infrastructure (high cost)										
Provide soak pits for wastewater disposal in non-sewered areas										
Expanding or laying settled sewerage for wastewater										
Construction of covered drains for storm water drainage										
Construction/ augmentation of sewage treatment plant										
Construction/ augmentation of treatment plant for effluent/ sullage										
Procure new suction emptier trucks										
Construction/ augmentation of faecal sludge treatment plant										
EFFICIENCY AND SERVICE OPERATIONS										
A) Process/Policy improvement measures (no-cost)										
Improving wastewater and septage quality surveillance										
Improving processes for management of consumer complaints										
B) Existing system improvement measures (low-cost)										
Increase reuse/ recycle of treated wastewater and septage										
Conduct regular wastewater and septage quality tests										
Improvement in consumer grievance redressal system										
FINANCIAL SUSTAINABILITY										
A) Process/Policy improvement measures (no-cost)										
Improving billing and collection of wastewater bills										
B) Existing system improvement measures (low-cost)										
Improving collection efficiency of wastewater charges/ taxes										

SOLID WASTE MANAGEMENT (SWM)

Actions for performance improvement	Impact of actions on KPIs								
	Coverage of household level SWM services in city	Coverage of household level SWM services in slum	Efficiency of collection of SWM	Extent of segregation of SWM	Extent of SWM recovered	Extent of scientific disposal of SWM	Efficiency in redressal of customer complaints	Efficiency in collection of SWM charges	Extent of cost recovery in SWM services
ACCESS AND COVERAGE									
A) Data improvement measures									
Household survey to assess solid waste services									
Computerisation of records									
B) Process/Policy improvement measures (no-cost)									
Preparation of a management plan to efficiently deploy manpower and resources									
C) Existing system improvement measures (low-cost)									
Procure additional equipments for street sweeping and drain cleaning									
Procure additional equipments for door to door solid waste collection									
IEC campaign for awareness of SWM compliance with MSW Rules 2000									
D) Create new infrastructure (high cost)									
Employ additional staff on contract for improving solid waste service delivery									
Engage with private service providers for providing solid waste services									
SERVICE LEVELS AND QUALITY									
A) Data improvement measures									
Tracking solid waste transport vehicle movement for increasing operational efficiency									
B) Process/Policy improvement measures (no-cost)									
Improving processes for maintaining daily logs of solid waste across SWM value chain									
Process for periodic estimation of recyclable material collected by recyclers									
C) Existing system improvement measures (low-cost)									
Segregation of solid waste collection and transportation									
Improvement in secondary solid waste collection system									
Installation of litter bins at public places									
Improving efficiency of solid waste collection with present vehicles									
Repairing of existing solid waste processing plant									
D) Create new infrastructure (high cost)									
Procure of new vehicles for solid waste collection and transportation									
Construction of solid waste transfer station									
Installation of weigh bridges									
Construction of new solid waste processing plant									
EFFICIENCY IN SERVICE OPERATION									
A) Process/Policy improvement measures (no-cost)									
Improving processes for management of consumer complaints									
Process for allotment of government land for processing/ disposal									

SOLID WASTE MANAGEMENT (SWM)

Actions for performance improvement	Impact of actions on KPIs								
	Coverage of household level SWM services in city	Coverage of household level SWM services in slum	Efficiency of collection of SWM	Extent of segregation of SWM	Extent of SWM recovered	Extent of scientific disposal of SWM	Efficiency in redressal of customer complaints	Efficiency in collection of SWM charges	Extent of cost recovery in SWM services
Process to obtain authorisation from concerned authorities and furnish annual report of compliance									
Review of operating practices at scientific landfill sites to ensure compliance MSW rules 2000									
B) Existing system improvement measures (low-cost)									
Improvement in consumer grievance redressal system									
C) Create new infrastructure (high cost)									
Construction of new sanitary landfill facility									
Closure of existing dumping site in scientific manner as per MSW rules 2000									
FINANCIAL SUSTAINABILITY									
A) Process/Policy improvement measures (no-cost)									
Improving billing and collection of solid waste bills									
B) Existing system improvement measures (low-cost)									
Improving collection efficiency of solid waste charges/ taxes									

The Performance Assessment System (PAS) Project

The Performance Assessment System (PAS) Project supports development of appropriate tools and methods to measure, monitor and improve delivery of urban water and sanitation services in the states of Gujarat and Maharashtra. The PAS Project includes three major components of performance measurement, performance monitoring and performance improvement. It covers all the 400+ urban local governments in Gujarat and Maharashtra.

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PAS Project

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